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2-3-2016

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Cornhusker Economics

Buying Bulls by Value

Market Report	Year Ago	4 Wks Ago	1-29-16
Livestock and Products.			
Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight.	*	135.00	137.00
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb. . . .	278.92	189.17	184.43
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb. . . .	217.73	171.74	161.85
Choice Boxed Beef, 600-750 lb. Carcass.	246.69	207.16	221.40
Western Corn Belt Base Hog Price Carcass, Negotiated.	67.49	49.59	60.51
Pork Carcass Cutout, 185 lb. Carcass 51-52% Lean.	80.32	69.11	75.95
Slaughter Lambs, woolled and shorn, 135-165 lb. National.	*	141.38	
National Carcass Lamb Cutout FOB.	378.87	363.23	358.56
Crops.			
Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu.	4.87	3.87	3.92
Corn, No. 2, Yellow Nebraska City, bu.	3.47	3.42	3.50
Soybeans, No. 1, Yellow Nebraska City, bu.	9.16	8.36	8.37
Grain Sorghum, No.2, Yellow Dorchester, cwt.	6.88	5.57	5.73
Oats, No. 2, Heavy Minneapolis, Mn, bu.	3.08	2.65	2.56
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton.	212.50	173.75	155.00
Alfalfa, Large Rounds, Good Platte Valley, ton.	75.00	83.75	82.50
Grass Hay, Large Rounds, Good Nebraska, ton.	82.50	85.00	85.00
Dried Distillers Grains, 10% Moisture Nebraska Average.	177.75	135.00	135.00
Wet Distillers Grains, 65-70% Moisture Nebraska Average.	58.00	51.50	52.00
* No Market			

Choosing the right bull for your herd is a complex decision involving many factors including the type of person you are, the type of cows in your herd, and the type of calf you are marketing. If you are only interested in producing terminal market animals you would likely select a herd sire strictly for growth and carcass qualities. Whereas, if you sell weaned calves and keep your own replacement females, you may be more likely to focus on bulls with more maternal traits.

This article doesn't offer advice or recommendation about which type or kind of bull to purchase, but zeros in on comparing value differences among bulls of the same type. This can be done using the Bull Value Cow-Q-Lator, found at www.agmanagerstools.com. It assumes that the user is comparing value or looking at purchasing bulls that are of the type he deems important, but he wishes to decide objectively among them utilizing performance indicators, knowledge and experience. This is similar to what producers already do but is more formal since the information in the producer's head must be turned into dollar values he believes each bull will provide in the form of added calf values, genetically (breeding) or phenotypically (performance).

Comparing the actual price paid for the bull is only part of the equation. You will need to in-

clude expected returns to complete it. One way to evaluate possible replacement bulls is to compare their purchase costs minus the differences in the value of their calves.

To illustrate how this decision tool might perform, let's use an example. Suppose you attend a bull sale where you find 3 acceptable herd sire candidates to purchase. These bulls are identified as 1, 2 and 3. These bulls are of varying quality, that is their EPD's and physical characteristics cause them to be valued differently from each other. Since they are to be sold in an auction, you estimate that they are likely to sell for the following amounts: Bull 1 (\$6,000), Bull 2 (\$8,000), and Bull 3 (\$5,000). It is expected that these bulls cost about the same to maintain and have the same expected longevity (death, injury, reproductive performance), the only differences would be the ownership costs of depreciation and the added value of the calves.

Our example uses annual individual bull costs of \$750 for feed, a 6% expected rate of return on investment, 4 years of serviceable life, 25 cows bred per year, a 110% replacement cost, a 2% chance of death and a 5% chance of injury, \$300 of non-feed costs (vet, medicine, etc.), and \$120 of miscellaneous expense (labor, management, transportation). The expected average value added for each calf weaned over the current bulls is estimated to be \$10 for Bull 1, \$50 for Bull 2 and \$0 for Bull 3. The expected calving rate for your herd is 87% regardless of which bull is used.

These values were entered into the Bull Value Cow-Q-Lator, and resulted in three different adjusted costs per weaned calf: \$119.47 for Bull 1, \$149.76 for Bull 2, and \$104.33 for Bull 3 all of which are listed in the first row of Table 1. If costs were all that are considered, Bull 3 has the lowest annual unadjusted cost per weaned calf of \$104.33. However, if the expected average value added by each bull is included in the analysis (\$10 for Bull 1, \$50 for Bull 2, and \$0 for Bull 3), Bull 2 becomes the best buy since the unadjusted costs per weaned calf of \$149.76, minus the added value of the weaned calf, \$50, which gives an adjusted cost per weaned calf of \$99.76. This cost is over \$4 per calf less than Bull 3 and more than \$9 less than Bull 1. These results are recorded in the second row of Table 1.

The Current Costs, CCBull, column in Table 1 has the lowest unadjusted and adjusted cost and represents an estimate of the user's current bull costs. This column indicates that current production costs are lower than any of the 3 bulls considered for purchase. In fact, the last row in this table shows that the calves of each of the bulls considered need to have an added value of \$21.76, \$52.05 and \$6.62 for Bulls 1, 2, and 3 respectively to bring the adjusted costs per weaned calf in line with the CCBull costs. To demonstrate this point, Bull 1, if purchased for \$6000, has an expected \$119.47 unadjusted cost per weaned calf and a \$109.47 adjusted cost per weaned calf, due to a \$10 expected added value of the calf. It would require an additional \$11.76 added calf value to keep breeding cost unchanged from estimated current breeding costs

Table 1. Estimated Bowl Cost per Weaned Calf and the Effects of the Calf's Added Value Due to the Bull on Realized Costs

	CCBull*	Bull 1	Bull 2	Bull 3
Unadjusted Bull Costs per Weaned Calf	\$97.71	\$119.47	\$149.76	\$104.33
Adjusted Bull Costs per Weaned Calf (Realized Costs)	\$97.71	\$109.47	\$99.76	\$104.33
Amount of Added Value to Equate Bull Costs	--	\$21.76	\$52.05	\$6.62

* Current Cost Estimates

Another way this worksheet might be useful is to estimate how much you could pay to purchase a bull or set of bulls and maintain a designated cost. To illustrate this suppose the same buyer from above wants to keep adjusted costs per weaned calf at the same level as his/her estimated current costs, CCBull column. In this case the buyer wishes to determine how much the bull/s he is purchasing are worth. These estimates can be easily accomplished by changing the bull purchase price for the selected animal, until the adjusted costs per weaned calf matches the CCBull's adjusted per weaned calf costs. Using the same information from the first example, it is estimated that Bull 1 is worth \$5,223, Bull 2 is worth \$7,865 and Bull 3 is worth \$4,563. See Table 2. These prices would be the maximum amount the buyer should be willing to pay for these bulls if the designated or goal costs are to be maintained.

Whether you use this worksheet or develop something else when purchasing your herd sire, it is im-

portant to remember to try to include an accurate estimate of the added value to production for that sire as well as knowing the total purchase costs. This may require some effort since not all benefits and costs are easily measured or estimated. To accomplish this, each animal purchase should be measured as objectively as possible. The closer your estimates of value reflect reality, the better chance the decisions made using that information are likely to achieve the desired outcome.

To obtain a copy of this spreadsheet enter the webpage address, farm.unl.edu/beef into the URL line, then select "Decision Tools", then scroll down until you find the red hyperlink titled "Bull Value Cow-Q-Lator". Click on this hyperlink to download the decision tool. This decision aid requires Microsoft's Excel® program.

Table 2. Estimated Value of Bulls 1, 2, and 3 to Keep Bull Costs Unchanged from the Current Costs.

	<u>CCBull*</u>	<u>Bull 1</u>	<u>Bull 2</u>	<u>Bull 3</u>
Estimated Purchased Price	\$4,000	\$6,000	\$8,000	\$5,000
New Adjusted Purchase Price	---	\$5,223	\$7,865	\$4,563

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